LABORATORY ASSIGNMENTS-002

UNIX System Programming (CSE 3041)

Working with Unix filters: grep, egrep, fgrep, head, tail etc.

Uses of `grep` and `egrep` regular expression for pattern serching.

Practice Assignment/ Minor Assignment::

The syntax of **`grep`** is **`$ grep`** **option pattern filename(s)**, searches the named files or the standard input and prints each line contains an instance of the **pattern**. Students are required to try various options such as -n, -v, -i, and -y etc. of grep from the **man** page.

1. A sample file is given below to demonstate the uses of regular expression (basic regular expression and extended regular expression) metachracters to search the pattern from the file using the **`grep`** family commands. The content of the given file can be update as per the requirement, if any.

```
Hello World
hello World
Hello Again
I like typing this.
This is fun.
Yay! Printing.
I'd much rather you 'not'.
I "said" do not touch this.
afile is for grep demonstrations
bfile for sample creation
cfile for lab programs
a|bfile
(a|b)file
12
34
56
7855
12.34
0.34
1234.56788
*
* *
* * *
pattanayak
pattanaik
patanayak
parhi
padhi
padhy
parhy
pardhee
patnayak
patnaik
```

```
patttanayak
pattannayak
patttanaik
7000
8000
7867
7123
3456
768
```

Answer the followings using **grep**, and **egrep** commands:

(a) Print the lines contating the pattern afile, bfile, and cfile.

(b) Display the patten a|bfile in the file.

(c) Display the pattern (a|b)file.

(d) Display all integer numbers.

(e) Display all fractional number.

(f) Print the lines contating pattanayak.

(g) Print the lines containing pattanayak, pattanaik,patanayak, patnayak, and patnaik.

(h) Print all non-alphabatic lines from the file.

(i) Print all lines begin with 7.

(j) Print all line end with k.

(k) Add few blank lines to the end of the file. Display all the blank lines.

(l) Display lines begins with a vowels.

2. Find the lines from the given file beginning with any number of non-colons and containing a double column.

```
Iter is a good college
:::
::
::::::::::::
set is final
college
law
lawyer
llllyyypp
l l l
abababababab
aaabbbbbb
aab
abab
today
Tomorrow
abdest
aaaabbb
aaaabbba
```

```
befist
a
aa
aaaaaaaa
bc::cde
::grep fasmilies
:with regular expression grep is a simple programming language
with regular expression grep is a simple programming language:
with regular expression grep is a simple programming language::
```

3. Find the lines from the above file containing 2 instances of **a**.
4. Find the lines from the above file comtating $2 - 4$ instances of **a**.
5. Let us assume you have a dictionary intended for checking spelling. Write a pattern using regular expression to find words that contain all five vowels in alphabetical order. **Hint:** Your system may have a dictionary of words in */usr/share/dict/words* directory. Run the command **`$ cat /usr/share/dict/words`** to display and get the words. You are required to not create any separate file to store those words. Directly run **grep** command over that directory to get the desired words in alphabetic order.
6. Find the number of words beginning with letter **a** from the dictionary.
7. Find the words beginning with **a** and ended with **e**.
8. List the words that have letters in alphabetical order of length 5 or more.
9. Regular expression given as **[ar][ra]s?**. Write down the possible patterns.
10. Two patterns are given as **aggarwal**, and **Agarwal**. Construct a single regular expression for them.